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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,231	12/31/2003	J. Gilbert Tisue	034011-006	7124

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EXAMINER

PHAM, THOMAS K

ART UNIT	PAPER NUMBER
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2121

DATE MAILED: 08/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/748,231

Applicant(s)

TISUE, J. GILBERT

Examiner

Thomas K Pham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

First Action on the Merits

1. Claims 5-14 of U.S. Application 10/748,231 filed on 12/31/2003 are presented for examination.

Quotations of U.S. Code Title 35

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(c) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Double Patenting

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 5-14 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-12 of U.S. Patent No. 6,697,683. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the following reason:

The system of claim 5 is clearly listed in claim 5 of U.S. Patent No. 6,697,683. Claim 1 of the present application is broader claim that discloses a broader limitation as in claim 5 of U.S. Patent No. 6,697,683. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to prevent the unjustified or timewise extension of the "right to exclude" granted by a patent to produce a more broader claim. Therefore, claim 5 is not patentably distinct from the U.S. Patent No. 6,697,683.

Claims 6-14 are depending on claim 5 of the present application. Therefore, they are also not patentably distinct from the U.S. Patent No. 6,697,683.

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Claim Rejections - 35 USC § 102

8. Claims 5-6 and 8-14 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,450,202 ("Tissue").

Regarding claim 5

Tissue teaches an agile positioner means responsive to an actual position of a substantially non-resonant load (col. 11 lines 42-47) and operative to provide drive control information for driving an actuator means to position said load, comprising:

- a. sensing means responsive to a substantially stationary load for generating an actual position signal (col. 2 lines 55-62, "Actual positions of a mirror ... actual position values");
- b. open loop sequence computation means responsive to a desired position and the actual position signal for determining differences between desired and actual positions of said load at one or a plurality of positioner cycles (col. 2 lines 63-68, "The actual position ... positions at given times"), correction calculation means responsive to said differences for calculating and outputting open loop sequences computed for a boundary state of velocity and position error at an end of the positioner cycle whereby said load moves closer to said desired position and with substantially zero velocity at the end of each positioner cycle (col. 3 lines 1-4, "calculating means for correcting ... to the desired positions"); and
- c. drive means for amplifying the open loop sequences to produce an actuator drive signal on an output line (col. 3 lines 4-6, "drive amplifier means ... drive force currents").

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Regarding claim 6

Tissue teaches the actuator means is linearly moveable (col. 11 lines 39-42, "A load such as ... type of load").

Regarding claim 8

Tissue teaches the open loop sequence comprises two substantially equal pulses opposite in polarity, of substantially equal width and inverting for opposite correction polarity (col. 6 lines 44-51, "Summing means 144 ... inverted by inverter 160 or uninverted").

Regarding claim 9

Tissue teaches the open loop sequences comprise two substantially equal pulses opposite in polarity, of substantially constant amplitude, of substantially equal width, occupying a variable width positioner cycle and inverting for opposite correction polarity, whereby the open loop sequences constitute pulse width modulation (col. 6 lines 44-62, "Summing means 144 ... the predicted centroid position 150").

Regarding claim 10

Tissue teaches open loop sequence computation means and said correction calculation means further include a term for a velocity, whereby the positioner is responsive to the velocity of the actuator (col. 11 lines 3-13, "the load-armature has velocity ... having been stationary").

Regarding claim 6

Tissue teaches the positioner cycle occupies a constant time interval (col. 10 lines 59-63, "Zero velocity points ... drive force magnitudes").

Regarding claim 12

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Tissue teaches sensing means includes a digital sensor means for sensing the actual position of an optical element and for responsively providing interpolated actual position signals, comprising:

- a. lighting means for emitting and focusing a beam of emitted light towards said optical element so that the beam is reflected as a beam of reflected light (col. 2 lines 56-57, "lighting means for emitting ... reflect by the mirror");
- b. optical detector means including an array of discrete photodetector elements for detecting an intensity distribution of reflected light in said array and responsively producing detection signals serially forming an intensity sample waveform output from the detector means (col. 2 lines 57-60, "optical detector means ... intensity sample waveform");
- c. filter means for reducing high frequency content and forming a filtered waveform from said intensity sample waveform for improved interpolation (col. 2 lines 60-62, "interpolating means for ... actual position values");
- d. a threshold logic means for receiving said filtered waveform, comparing said filtered waveform to a reference threshold level, responsively producing a first and second binary envelop waveform representing an interval to a first and a second crossing of the threshold level by the filtered waveform (col. 6 lines 11-17, "interpolating circuit 114a ... outputs on line 130"); and
- e. a counting and averaging means for counting to a value representing a center between the first and the second crossing of the threshold level of the first and the second binary envelope waveform and outputting said total value as said interpolated actual position signal (col. 6 lines 17-38, "The waveform 126 is ... from CCD array 100").

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Regarding claim 13

Tissue teaches lighting means continuously projects said beam of emitted light (claim 9 lines 50-51).

Regarding claim 14

Tissue teaches lighting means pulses said beam of emitted light (claim 10 lines 53-54).

Claim Rejections - 35 USC § 103

9. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,450,202 ("Tissue")

Regarding claim 7

Tissue does not specifically show the sensing means comprises an analog sensor. "Official Notice" is taken that both the concept and advantages of providing an analog sensor is well known and expected in the art. U.S. Patent No. 5,450,202 issued to Nagayasu discloses using analog sensors as part of a positioning system (see col. 16 lines 15-28). It would have been obvious too one of ordinary skill in the art to include an analog sensor to the positioning system of Tissue because it would provide for receiving any acceptable analog signals in order to produce the actual position signal for the drive controller.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner *Thomas Pham*; whose telephone number is (703) 305-7587 and fax number is (703) 746-8874, Monday-Thursday and every other Friday from 7:30AM- 5:00PM EST or contact Supervisor *Mr. Anthony Knight* at (703) 308-3179.

Any response to this office action should be mailed to: **Commissioner for Patents, P.O. Box 1450, Alexandria VA 22313-1450**. Responses may also be faxed to the **official fax number (703) 872- 9306**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thomas Pham
Patent Examiner

TP

August 4, 2004

Ramesh Patel
RAMESH PATEL
PRIMARY EXAMINER 8/5/04
For Anthony Knight